

AMENDMENTS TO THE CLAIMS

1. (Original) A device for uniformly changing the length of an optic fiber along its longitudinal axis, said device comprising:

a support having a circumference around a single point;

a fiber having its longitudinal axis attached to said support circumference so that the longitudinal axis of said fiber assumes the same geometry as said support circumference; and

a mechanism for changing said support circumference.

2. (Original) The device of claim 1 wherein said fiber is not coaxial to the neutral axis of said support.

3. (Original) The device of claim 1 further comprising:

a mechanism for unfurling said support; and

a mechanism for at least one of stretching and compressing said support.

4. (Original) The device of claim 1 wherein:

said support is composed of a material capable of expanding and contracting when heat is applied and removed respectively; and

said expanding and contracting mechanism is temperature dependant.

5. (Original) The device of claim 4 wherein said material possess a greater than average coefficient of thermal expansion.

6. (Original) The device of claim 4 wherein said material is Ni-Ti.

7. (Original) The device of claim 1 wherein said support circumference does not complete a 360 degree circle, thereby having at least two ends at which force can be applied.

8. (Original) The device of claim 1 wherein said mechanism applies selective force to at least one of said ends of said support circumference.

9. (Original) The device of claim 8 wherein said force is applied as a torque.

10. (Original) The device of claim 7 wherein one of said ends is affixed to a rigid structure and wherein said mechanism applies a force to said other end.

11. (Original) The device of claim 7 wherein said circular support has a cross section thicker at its apogee than at its respective ends.

12. (Original) The device of claim 11 wherein said mechanism includes applying force to one of said ends while the other of said ends is held rigid.

13. (Original) The device of claim 11 wherein said mechanism includes applying force to both of said ends.

14. (Original) The device of claim 12 wherein said support structure is within a housing and wherein said force is applied by a screw pressing against at least one of said ends, said screw being supported by said housing.

15. (Original) The device of claim 7 wherein said optic fiber is part of a fiber optic transmission cable and wherein said mechanism is remotely activated.

16. (Original) The device of claim 15 wherein said remote activation results from performance observations of transmission along said fiber optic cable.

17. (Original) The device of claim 1 wherein said circular support has a cross section adapted to produce any desired non-uniform strain along said fiber.

18. (Original) The device of claim 1 wherein said fiber is a fiber Bragg grating.

19.-36. (Canceled)

37. (Original) A device for changing the applied strain in a fiber Bragg grating, said device comprising:

a circular support having a radius of curvature defined by radius R, said circular support not forming a continuous loop, thereby having ends;

means for attaching a portion of said cable containing said fiber Bragg grating to the periphery of said circular support; and

means for causing said ends to expand with respect to each other thereby changing radius R.

38. (Original) The device of claim 37 wherein said attachment is to the outer surface of said support.

39. (Original) The device of claim 38 wherein said outer surface has a groove therein for positioning said cable.

40. (Original) The device of claim 37 wherein said attachment is to the inner surface of said support.

41. (Original) The device of claim 37 wherein said attachment is to a side surface of said support.

42. (Original) The device of claim 37 wherein said device is contained within a housing having an input and an output for said cable; and wherein said flex causing means includes means for applying forces to at least one of said ends, said forces applied with respect to said housing.

43. (Original) The device of claim 37 wherein said flex causing means is responsive to remotely provided signals.

44. (Original) The device of claim 37 wherein said flex causing means is controlled by adjustments applied manually.

45. (Original) The device of claim 37 wherein said flex causing means is controlled remotely in response to transmission tuning signals.

46.-52. (Canceled)